



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,049	06/20/2003	Thomas N. Chalin	WCMI-0035	6461
20558	7590	01/31/2007	EXAMINER	
SMITH IP SERVICES, P.C. 660 NORTH CENTRAL EXPRESSWAY SUITE 230 PLANO, TX 75074			BELLINGER, JASON R	
			ART UNIT	PAPER NUMBER
			3617	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/31/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/600,049	CHALIN ET AL.	
	Examiner	Art Unit	
	Jason R. Bellinger	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 November 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2-42 and 44-52 is/are pending in the application.
- 4a) Of the above claim(s) 5-12,22-29,37,40-42 and 45-52 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 2-4,13-21,30-36,38,39 and 44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 30-31, 33, 36, 38, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Bria et al. In Figures 7, 8, and 8A, Bria et al shows a suspension system 150 including an axle assembly 149. The axle assembly 149 includes an axle 152, at least a portion of which can be made from a composite material (see paragraphs [0104] - [0106]). At least two beams (172a-b) are attached to the axle 152, wherein the beams (172a-b) pivot relative to a vehicle frame.

The axle 152 extends through each of the beams (172a-b). At least two metal sleeves 155 are secured exteriorly about the composite axle 152, and each of the beams (172a-b) is attached to a respective sleeve 155. The composite axle 152 extends through each of the sleeves 155. The sleeves 155 act as axle seats.

A spindle 154 is attached to the composite axle 152, and attached to a sleeve 153 that at least partially overlies the composite axle 152. The sleeve 153 includes an axle seat 153a. A portion of the composite axle 152 is received with the interior of the spindle 154. The spindle 154 may be bonded to the composite axle 152 (by being bonded to the sleeve 153, which is bonded to the axle 152. See paragraph [0103]).

The spindle 154 is configured to permit rotation of a wheel relative to the axle 152, namely allowing the wheel to rotate with the axle 152.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bria et al. Bria et al contains all of the limitations as set forth in paragraph 2 above, but does not specify that the spindle 155 is welded to the sleeve 153. As stated in lines 12-15 of paragraph [0103], Bria et al states that the spindle 155 may be bonded to the sleeve 153.

It is well known in the art that welding is a method of permanently bonding two or more elements together. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to weld the spindle to the sleeve, for the purpose of creating a permanent bond therebetween, thus preventing relative movement between the spindle and sleeve, which would reduce wear on the components.

5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al. VanDenberg shows the use of an axle 19 attached to a suspension system. Namely, at least two beams 15 are attached to the axle 19 (thereby preventing rotation of the axle 19 relative to the beams 15) for pivoting displacement of the axle 19 relative to a vehicle frame 2. The axle 19 extends between and through each of the beams 15.

Art Unit: 3617

VanDenberg does not show at least a portion of the axle being made of a composite material. Gimlett et al teaches the use of a hollow axle 2, at least a portion of which is made from a composite material 3. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form at least a portion of the axle of VanDenberg from a composite material for in order to reduce the weight of the axle (and therefore entire assembly) without sacrificing the strength, etc. characteristics of a solid steel axle.

6. Claims 13-21, 30-36, 38, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al as applied to claims 2-4 above, and further in view of Aton. VanDenberg as modified by Gimlett et al does not show at least two metal sleeves secured to the axle.

Aton teaches the use of an axle assembly including an axle 2 and a spindle 1 attached to the axle 2. The spindle 1 is attached to a sleeve 12 that at least partially overlies the axle 2. An axle portion 5 is received within an interior 4 of the spindle 1. While not shown, the axle 2 of Aton would include at least two metal sleeves 12 secured exteriorly about the axle 2. Aton would also include two spindles 1 attached to the respective sleeves 12. The axle 2 extends through the sleeves 12 (namely, axle portion 5 extends through the sleeves 12). An axle portion 5 is received within an interior 4 of the spindle 1.

While not shown, the spindle 1 could be welded to the sleeve 12, in order to reduce the number of parts required to form the axle assembly, thus reducing assembly

time. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the composite axle of VanDenberg as modified by Gimlett et al with the physical features (i.e. sleeve, spindle, etc.) of Aton in order to allow a plurality of different types and sizes of wheels to be used on the vehicle, while allowing replacement of the spindles in the event of damage to the spindles.

The sleeves 12 of Aton could be attached to a respective one of the beams 15 as shown in VanDenberg. As shown in VanDenberg, the portion of each beam end 18 that surrounds the axle 19 acts as a pair of axle seats. These axle seats would be interconnected between the sleeves 12 of Aton and the beams 15 of VanDenberg. Furthermore, the sleeves 12 of Aton would be bonded to the axle composite portion (such as in the manner set forth in column 5, line 61 through column 6, line 3 of VanDenberg) in order to prevent axial movement of the sleeves and/or axle during operation of the vehicle. The sleeves 12 of Aton could also be "welded" to the beams 15 of VanDenberg, by heat fusing the composite material of the beams 15 to the sleeve 12 of Aton, as an alternative to adhesively bonding the two elements together, dependent upon cost and the exact type of connection required.

When given the configuration of Aton, the composite axle 2 (of Gimlett et al) would include a portion (5 as shown in Aton) that extends into each spindle 1. While not shown, one of ordinary skill in the art would find it obvious to bond the spindle 1 to the composite axle 2 (of Gimlett et al) in order to reduce the amount of relative rotation between the axle and spindle during operation, thus preventing failure of the assembly, increasing safety considerations, and reducing wear between the components.

7. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al and Aton as applied to claims 13-21, 30-36, 38, 40, 44 above, and further in view of Bradley. VanDenberg as modified by Gimlett et al and Aton does not show the spindle including a brake mounting attached thereto.

Bradley teaches the use of a spindle 12 that includes a brake mounting 38 attached thereto. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a brake mounting on the spindles of VanDenberg as modified by Gimlett et al and Aton for the purpose of allowing a brake element and/or wheel to be mounted onto the spindle, as is well known in the art, thus providing a means to retard the rotation of a wheel mounted on the spindle.

Response to Arguments

8. Applicant's arguments filed 16 November 2006 have been fully considered but they are not persuasive. First, it should be noted that Applicant listed claim 44 as being withdrawn from consideration. However, this claim is a currently pending elected claim.

The Applicant has retained the arguments previously filed regarding the rejection under the VanDenberg reference. The Examiner thus retains the response to those arguments presented in the previous Office Action.

The Applicant argues that Bria et al does not show an axle assembly that "permits relative rotation" between the wheels and axle. However, claim 30 only states

that the spindle is "configured to permit rotation of a wheel relative to the axle", which does not preclude a wheel that rotates with the axle. Therefore, Bria et al is still considered to meet the limitations of the claims.

Applicants argument that Gimlett et al teaches away from an attachment between the beams and axle that prevents rotation of the axle to the beams. It should be noted that Gimlett et al was only used to teach an axle made form a composite material, and was not literally combined with VanDenberg, who clearly shows an axle and beam connection that prevent relative rotation therebetween.

The Applicant further argues that Gimlett et al teaches away from a spindle that rotatably mounts a wheel to the axle. Again, it should be noted that Gimlett et al was only used to teach an axle made form a composite material, and wasn't literally combined with VanDenberg. Furthermore, since VanDenberg clearly shows a non-rotating axle, the wheel assemblies 21 would then be required to be rotatably with respect to the axle in order to form a functioning assembly.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 3617

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason R Bellinger
Primary Examiner
Art Unit 3617

